



go2signals

**RELEASE NEWS
VERSION 25.1**

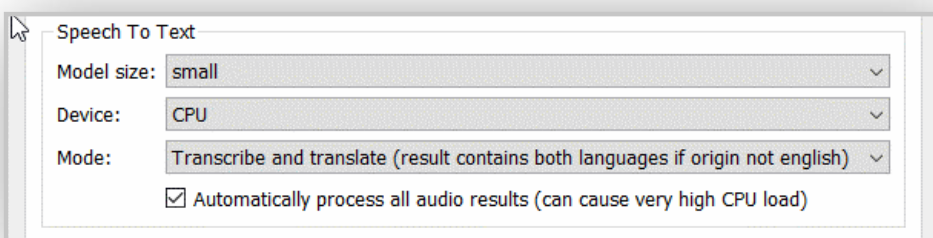
PROCITEC®
HOUSE OF SIGNALS

GO2MONITOR ENHANCEMENTS

NEW FUNCTION: AI SPEECH-TO-TEXT (STT)

The automatic transcription of spoken language (Speech-to-Text, STT) based on AI has made great progress in recent times. As one of its functional highlights, go2MONITOR now offers an integrated interface to such a software (Whisper).

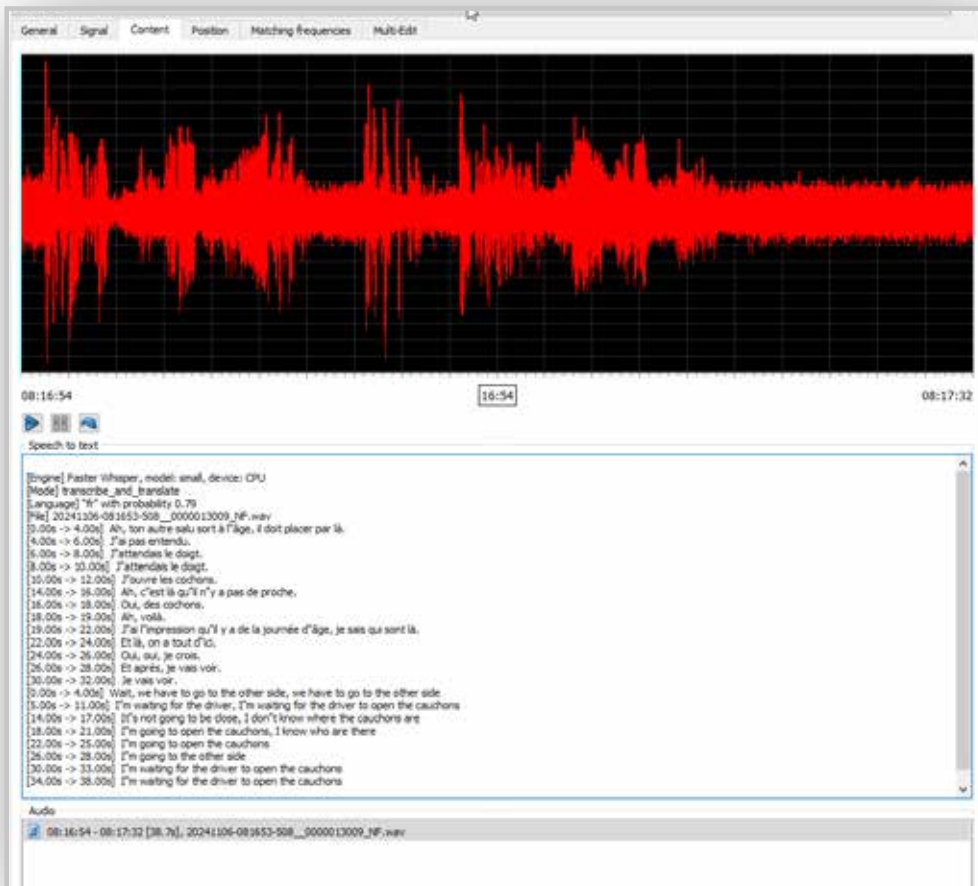
Demodulated audio recordings are first stored in the results database and then transcribed and translated (to English) to text by the new postprocessing STT functionality.



Setup STT AI language model and functions in the settings dialog



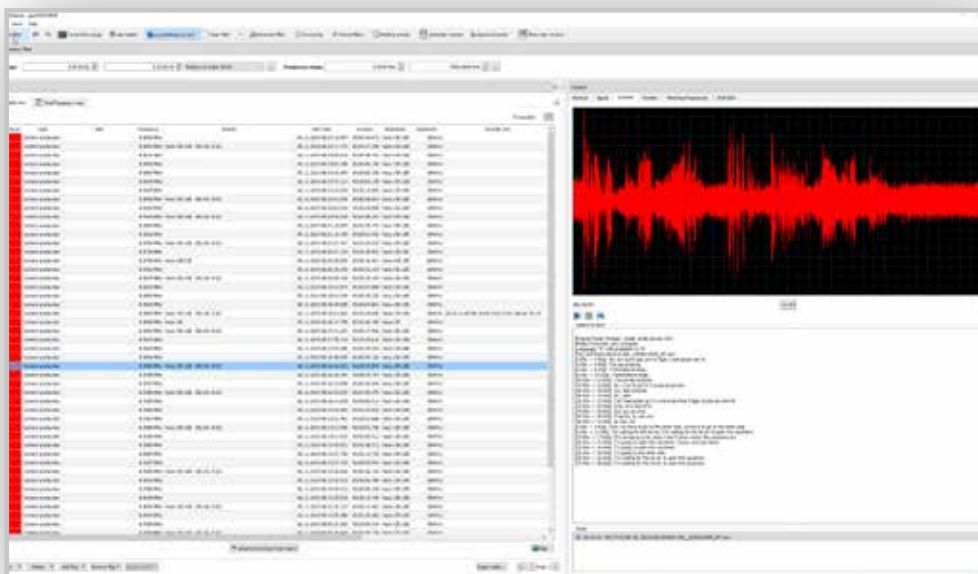
Example: Automatic voice recognition and recording



Voice recording, transcript (French language) and translated text are stored in result database

This opens up completely new possibilities, e.g.:

- Searching for spoken content and generating content based warnings
- Simply forwarding the spoken content in text form to other systems/software
- Using of translation to easy understand other spoken languages



Browse results with ResultViewer and get all the recording transcript and translated text

GO2MONITOR ENHANCEMENTS

IMPROVED BULK FILE PROCESSING

Bulk File Processing is an automatic processing mode in which go2MONITOR observes a list of directories for new signal recording files and automatically processes (classifies, demodulates and decodes) them.

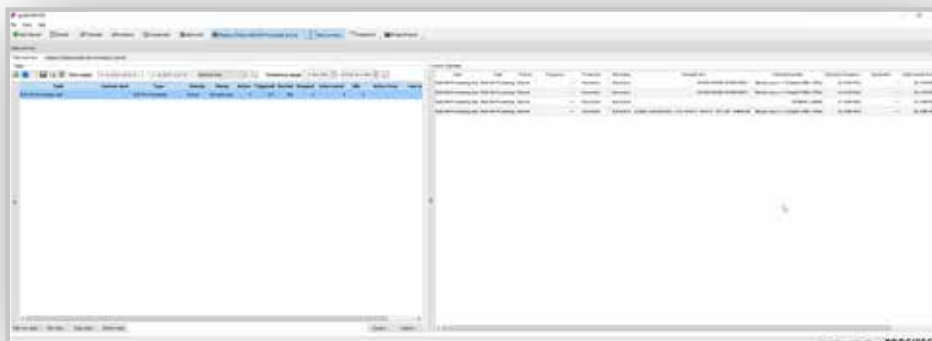
Main applications are:

- Easy addition of decoding functions to existing recording software
- Processing of large recording libraries to obtain classification and decoding results



New automatic task type "Bulk File Processing"

This new release incorporates a new iteration of the Bulk File Processing function, which has been integrated into the automatic monitoring process. Consequently, all associated functions, including task monitoring, filtering, etc. are now accessible. Furthermore, the remote control of software has been enhanced, enabling the configuration and control of its functionality through the application programming interface (API).



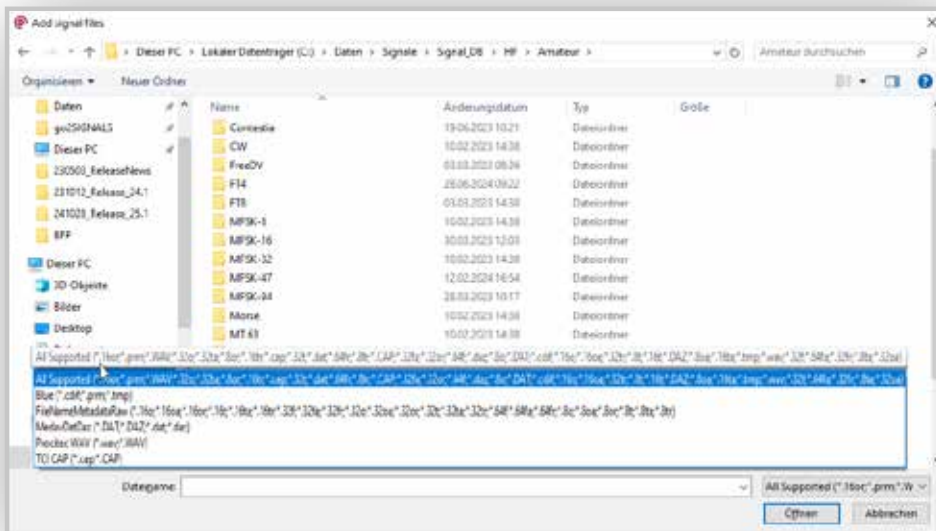
In the task overview window, the processing of new files can be monitored

EXPANDED: FILE FORMATS AND STREAMING INPUT

Note: This feature is also new in go2DECODE and Signal Analyzer

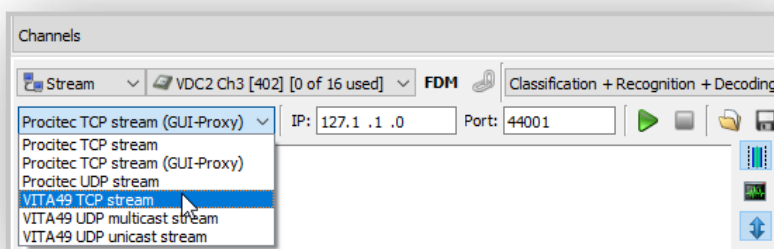
You often want to be able to process signal recordings that were created with other tools in go2MONITOR. For this reason, the go2signals products (go2MONITOR, go2DECODE and Signal Analyzer) now support additional recording formats such as:

- Wave (inclusive PROCITEC extended file information) signal file format
- Medav DAT signal file format
- Custom RAW signal file format
- Midas BLUE signal file format
- TCI CAP signal file format



Many additional signal file formats are now supported

Processing channels in go2MONITOR now include stream input directly from Vita49 TCP/UDP sources, such as from receivers streaming IQ data in VITA49 format.



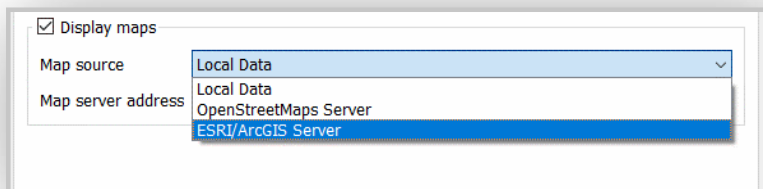
VITA49 stream setup as processing channel input

GO2MONITOR ENHANCEMENTS

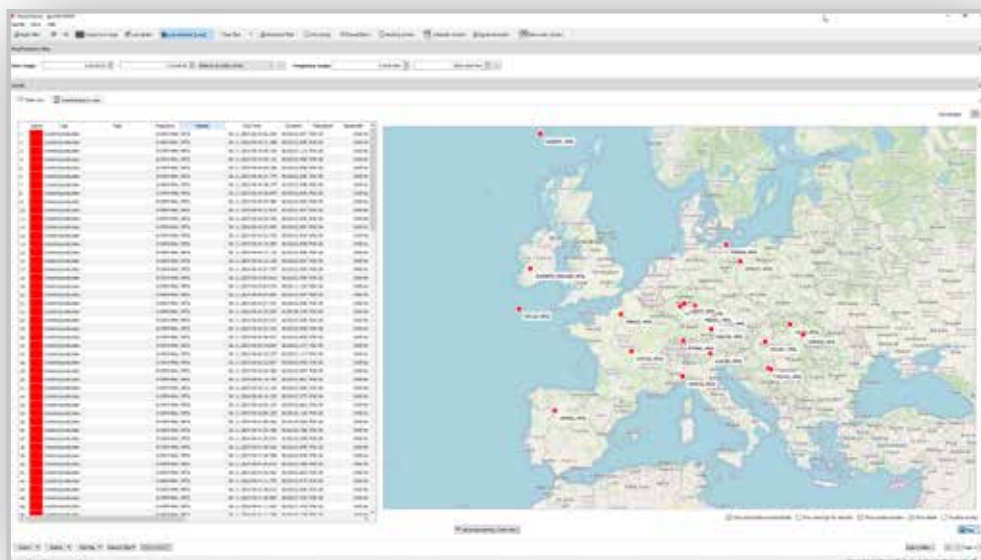
ENHANCED: SUPPORT FOR MAP SERVER

We added support for additional map servers, following sources are now available:

- Local file data (in go2MONITOR included maps)
- Local ESRI/ArcGIS servers
- Global map servers over https (OpenStreetMap and ArcGIS servers)



Setup map source in setting dialog

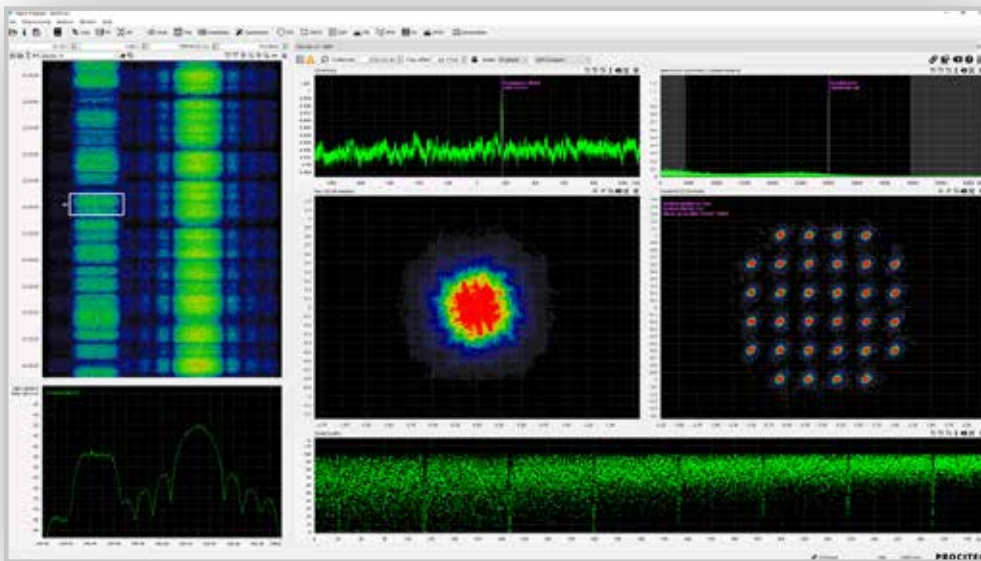


Position of a signal is shown in a map based on decoded data or DF measurement (if connected)

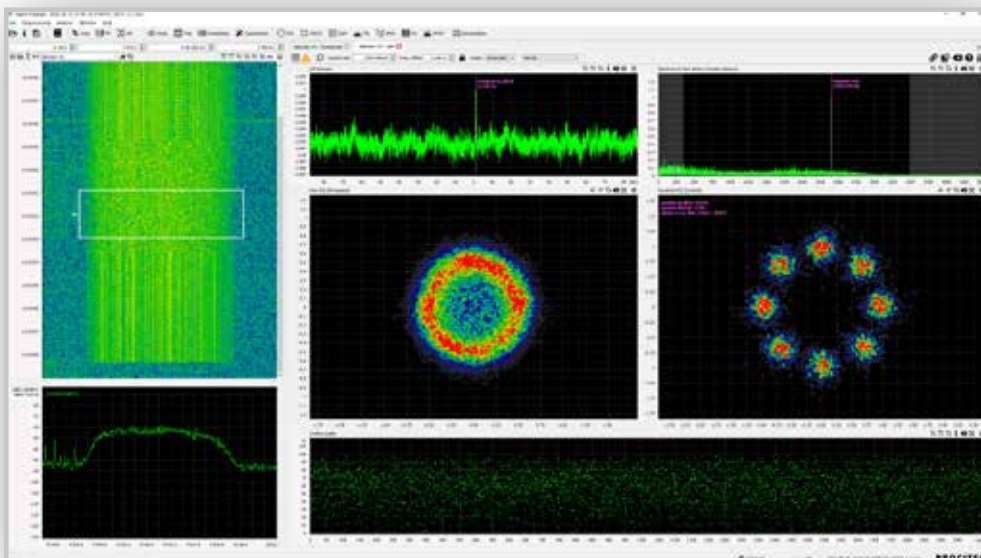
SIGNAL ANALYZER ENHANCEMENTS

NEW: TEMPLATE QAM ANALYSIS

This new template adds additional measurement features specialized on QAM modulation analysis. Main new functionality is a high performance blind equalizer supporting many different PSK and QAM modulation from PSK2, 4, 8, 16, 32 up to QAM4, 8, 16, 32, 64, 128. Even highly disturbed signals are equalized and checked for its modulation.



Example: Analysis and equalization of a QAM 32 modulated signal

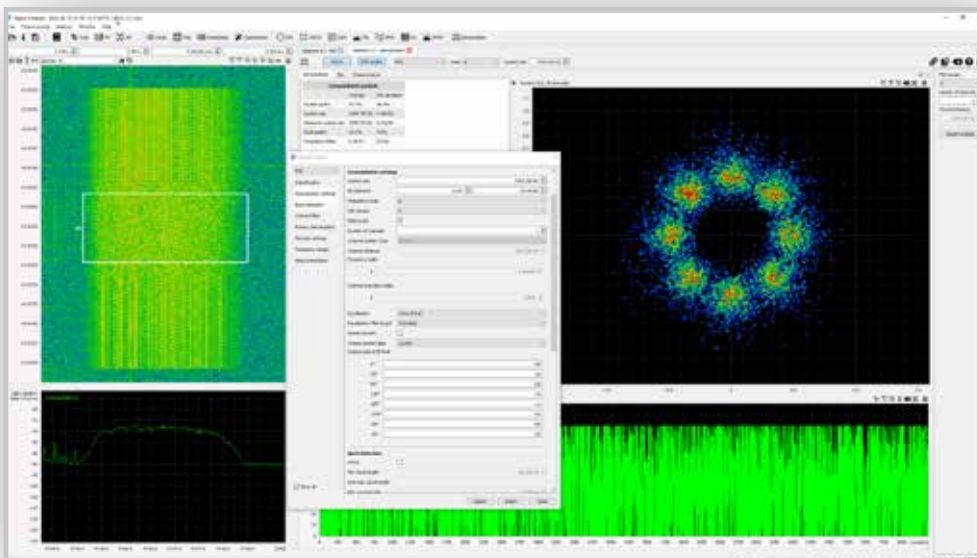


Example: Using QAM template for STANAG 4539 HDR equalization

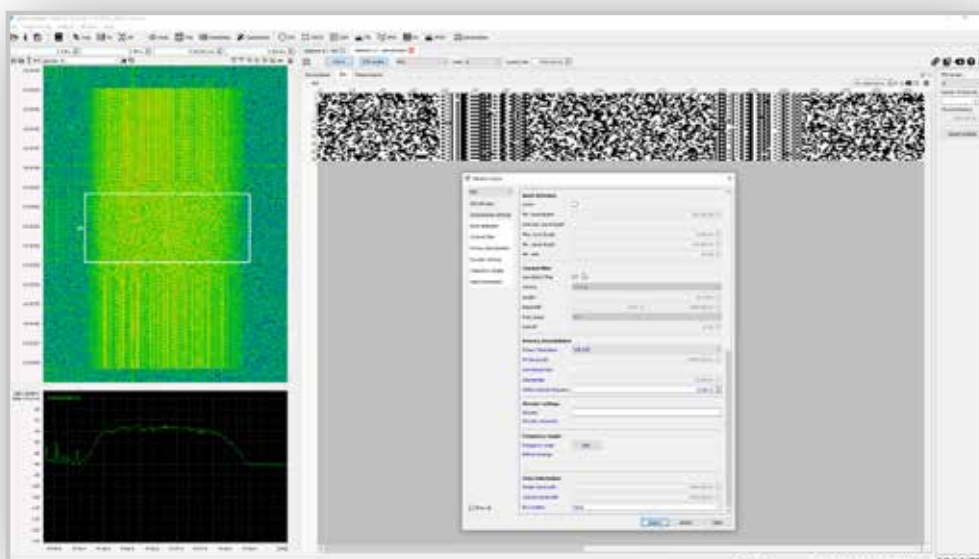
SIGNAL ANALYZER ENHANCEMENTS

ENHANCED: ADDITIONAL DEMODULATORS

The next step in signal processing after modulation analysis is the demodulation. In release 24.1 we already presented our universal demodulators for the modulation types FSK and PSK. In this release, we have again significantly expanded the capabilities and added all from other go2signal products well known demodulators like QAM, OQPSK, OFDM, Multi-channel, etc.



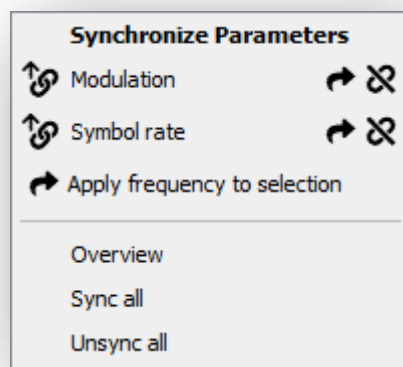
Example: Demodulate a heavy disturbed 8PSK signal using blind equalization function



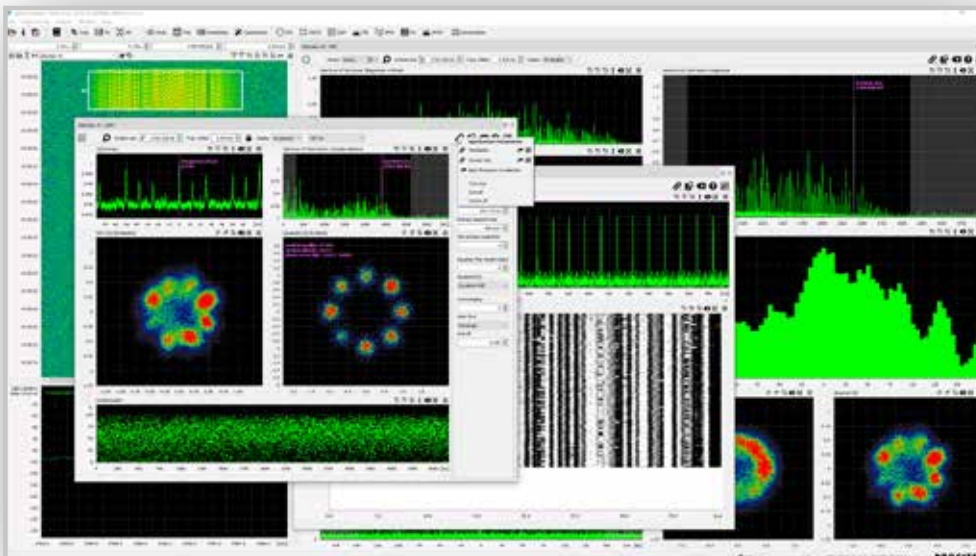
Example: Demodulated 8PSK signal, showing bit display and modem dialog with further parameters

SYNCHRONIZE MODULE PARAMETERS

Parameters that are measured in different analysis modules can now be synchronized between these modules. Fixing a parameter set it as a fixed result and is then used as the start value for subsequent measurements in the other modules.



Right click on the chain symbol opens the synchronize menu

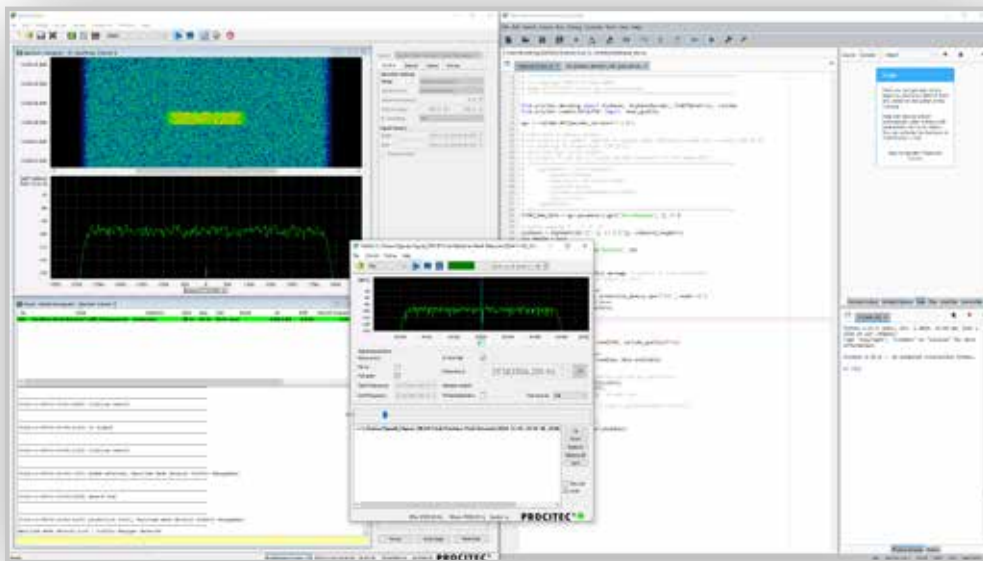


Synchronize measured parameters between different analysis modules

MODEM AND DECODER DEVELOPMENT

NEW: PRODUCT GO2MODEM-STUDIO

New and unknown signals are always an issue in the field of signal monitoring. The go2signals product line offers the complete tool chain to solve this problem, Signal Analyzer for analyzing the modulation type and now the new go2modem-studio for creating your own decoders and for editing and testing your own modem definition files.



go2modem-studio has two applications, Modem Lab (left) and Decoder Development (right)

Modem definition files summarize the results of the analysis, they describe the demodulation and decoding and are used in go2MONITOR for automatic processing of the signals. With your own modem definition, the unknown signal becomes a known signal that can now be recognized, demodulated and decoded fully automatically.



DECODERLIST

List of all available Decoders
www.procitec.com/go2signals-decoderlist

CLASSIFIER ENHANCEMENTS

Once again we expanded and improved our classifier with new features. We are increasingly replacing and improving the performance and quality of classification through the intensive use of AI technology. First of all, there are some general improvements in this release.

- FM-FDM: Optional support for unknown classification with estimation of channel usage
- Burst detector: Improve burst processing to allow processing of individual bursts down to approx. 1ms
- OTH Radar: Optional reporting of radar fragments
- ACARS: Improved modem classifier
- CIS-Akula: Improved modem classifier



MONITORING SUITE

Technical Specifications Document
www.procitec.com/go2signals-specifications-monitoring

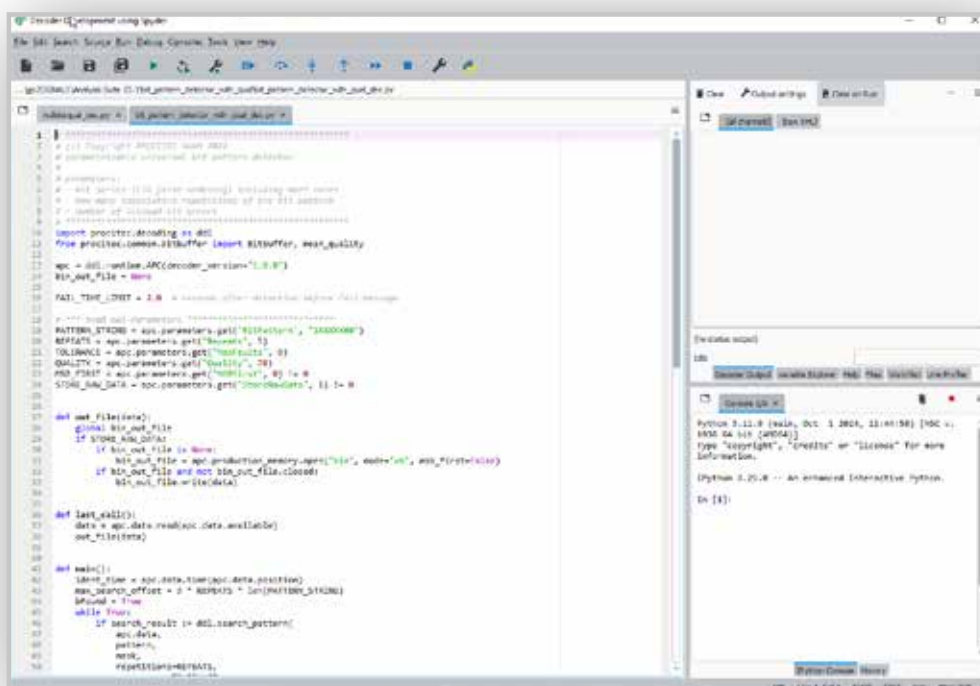


ANALYSIS SUITE

Technical Specifications Document
www.procitec.com/go2signals-specifications-analysis

DECODER AND DEMODULATOR ENHANCEMENTS

Immerse yourself in the world of communication with more than 370 modems directly available. And if something is missing, simply add your own decoder. With tools such as Signal Analyzer, Modem Lab and Decoder Development, we provide you with the right environment.



Customer decoders are easy coded using PROCITECs Decoder Development tool

NEW DEMODULATOR FEATURES:

- FSK: the universal FSK demodulator supports modulation orders of 4 and 8
- Multitone: support up to 15 simultaneous tones
- DRM: new special demodulator for all DRM modes (A/B/C/D) and bandwidths

NEW DECODER FEATURES:

- New decoder added
 - CIS MFSK-11
 - Iridium
 - Replaces "iridium_uplink" detector
 - Detection and decoding of uplink and downlink
 - Output may contain:
 - Voice detections
 - Control Data
 - User data like emails, SMS and IP-data
- CIS-12
 - Detect and report known sequences
 - Formatting of raw output
- CIS-Akula
 - Support continuous demodulation
 - Enable alphabet resynchronization
 - Do not depend on preamble detection
- CIS FSK 200/1000
 - Expanded processing of F06 mode
 - Implemented F06a mode
 - Adjusted ASCII/Hex output
- DMR / DMR continuous
 - Show in status line if encryption key-id and key is available (Motorola ARC4/DES/AES)
 - Automatic decryption of "Kenwood Basic"
 - Separate UDP port output (xml) and default app-description (text1 output)
 - Decoding of CACH/ShortLC and tier 3 C_SYS_Parms/P_SYS_Parms
 - Show in status line if current signal is a tier 3 control or payload channel
 - Corrections in PI header evaluation
- DRM: added new special demodulator for all DRM modes (A/B/C/D) and bandwidths
 - Full FEC decoding of audio, data and packet streams (save to file)
 - Display of SDC data entities
 - Audio codec not included
- HF DL
 - Suppress xml output for corrupted flight-id, call-sign and position
- NXDN
 - GPS coordinates and packet information evaluation
 - Display notification in status line if encryption key-id and key is available (DES)
- Robust Packet
 - Extract GPS coordinates from APRS packets
- Yaesu Fusion
 - Support data soft decision
 - General code corrections

DECODER AND DEMODULATOR ENHANCEMENTS

NEW DECODER DETECTION FEATURE:

- Nokia M90

NEW DECODER DEVELOPMENT LANGUAGE (PYDDL) FEATURES:

- Viterbi decoder supports reencoding for calculation of error metric
- Add `msb_first` parameter specifying interpretation of bits within an individual symbol to
 - `set_training_pattern()`
 - `set_burst_preamble()`

RECEIVER SUPPORT

We follow the wishes of our customers, which is why more and more receivers are supported directly in go2signals products as signal inputs. Your receiver already supports VITA49 - so much the better - then the functional diversity of the go2signals products is directly available to you.

- Added support for Rohde & Schwarz ESME
- Added support for Rohde & Schwarz RAW Ethernet interface, used by various receivers
- USRP receiver support status changed to „upon request“



New support of R&S ESME wideband receiver (copyright Rohde & Schwarz)

ADDITIONAL NOTEWORTHY CHANGES

- Enhanced spectrogram displays in narrowband channels for significantly smoother performance
- go2MONITOR installation now adds one empty AMT Mission with default settings named „Standard“ to enable immediate task creation
- Location of user directory and database/result directory changed (all go2signals products to <userfolder>/procitec). With 25.1 installation, database and result files will be automatically moved to a new location.
- Modem list handling changed: Installed modem list cannot be edited or deleted anymore. If changes in those lists are needed, copies can be created and freely edited.
- Modem and Decoder files are now stored on new locations, used by all Procitec products
- Settings Dialog can now apply default settings separately for GUI and system settings
- IP address and port used for streaming narrowband channel IQ signal can be copied to clipboard by clicking on a corresponding option in the spectrogram context menu
- Settings Dialog in standalone Result Viewer now includes options to set units and number of decimal places for frequency display
- Results created by using signal extraction function, now have the same antenna as the original wideband recording
- Displaying many bearings at once in a map display in ResultViewer is optimized. Furthermore, instead of displaying all bearing for all results, it displays now only bearing from selected results.
- AMT Wizard now opens much faster (maps are loaded later, only if needed)
- AMT Wizard: Selecting modem list explicitly for a narrowband action, can now be omitted. In that case, the system will use modem list reported by the wideband classifier.
- Some labels in AMT-Wizard renamed and some additional tooltips added
- GUI Automation Python API extended with new functions to bring MainWindow or ResultViewer to front
- GUI Automation Python API extended with a new function and to clear ResultViewer filter without updating the results
- To ensure that all values from ResultViewer filter are saved in a file (Export filter) or in database (Stored filters), the filter is automatically applied before saving

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